Cleaning Vermont's Waters through Responsible Farming:
A Proposal Drafted for Rural Vermont

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Prepared By:
Corinne Almquist
Nick Dickerson
Elizabeth Kelley
Lizzie Quinn
Aiko Weverka

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Executive Summary

Students from the Environmental Studies Senior Seminar at Middlebury College worked in conjunction with Rural Vermont to assess the potential strengths and weaknesses of Bill H.549 as well as to develop policy recommendations to address agricultural contributions to water quality problems. H.549 was introduced to the Vermont state legislature in February 2008 and proposed a mandatory 50-foot buffer on all Vermont waterways. It was widely opposed and eventually ordered to lie (i.e. no vote was taken), but it is likely to be reintroduced in some form in the coming legislative session. This bill addresses the important reality that Vermont has serious water quality problems and so the goal of this project was either to assess how the bill could be reworked to make it more appealing or to develop a proactive policy solution that would address similar water quality issues.

Through interviews with farmers, government officials, scientists and environmental groups, research of scientific literature, and research on water quality legislation from other Northeastern states we came to several conclusions that suggested H.549 was not the most effective way to address Vermont's water quality problem because:

1) It allows many of the existing activities that contribute to water pollution to remain in the buffer.
2) It would be extremely difficult to enforce as the Agency of Natural Resources does not have enough staff to carry out inspections.
3) There are diminishing returns in nutrient sequestration relative to increasing buffer width. A 10-foot buffer already captures ~50% of nutrients—a 50-foot buffer captures ~65%.
4) While a 50-foot buffer is easier to enforce, site-specific conditions (i.e. hydrology, soil type, land use, etc.) are more important in determining the appropriate buffer width.
5) There was the potential for a dual-jurisdiction problem for farmers who already must report to the Agency of Agriculture, but could be held accountable by the Agency of Natural Resources.

Given these findings, we decided to focus on improving the effectiveness of existing legislation designed to improve water quality, specifically focusing on agricultural regulation in the form of the Accepted Agricultural Practices (AAPs). We propose improving awareness of farmers' legal obligations, actively enforcing the AAPs, and creating a financial incentive to improve water quality through a certification program.

Glossary of Terms

- **AAPs: Accepted Agricultural Practices**
- **ANR: Agency of Natural Resources**
- **ARS: Agricultural Resource Specialist**
- **BMPs: Best Management Practices**
- **Buffer: a vegetated strip of land between surface waters and pasture or cropland designed to reduce soil erosion and filter nutrients**
- **CREP: Conservation Reserve Enhancement Program**
- **EPA: United States Environmental Protection Agency**
- **EQIP: Environmental Quality Incentive Program**
- **H. 549: the bill introduced by Rep. David Deen (D-Westminster) to the Vermont House of Representatives in February of 2008 that proposed establishing 50' buffers on all waterways of the state**
- **NPS Pollution: Nonpoint Source Pollution**
- **NRCD: Natural Resource Conservation District**
- **TMDL: Total Maximum Daily Load**
- **TRI: Toxic Release Inventory**
- **VAA: Vermont Agency of Agriculture, Food and Markets**

1. Vermont's Water Quality: A General Summary

1.1 Water Pollution in Vermont

Vermont's waterways have been polluted over the past two centuries by a variety of sources: mercury from power plants and industrial combustion has contaminated water to the degree that it is now unsafe to eat many large fish caught in Lake Champlain; accidental introduction of invasive species such as Eurasian water milfoil, zebra mussels, and water chestnuts have led to loss of biodiversity and have physically altered natural ecosystems; nutrient runoff from the impervious surfaces of urban development, agricultural activities, and aging septic systems have all contributed to toxic algal blooms. This last type of pollution is one of the most visible and important to Vermont's economy. Extreme algal growth, which is typically facilitated by excessive phosphorus levels from nutrient runoff, kills fish, produces an odor as it decomposes, and can be toxic to humans. This directly affects the tourism industry of Lake Champlain as beaches must be closed due to unsafe swimming conditions, fishing is limited, and camping near a noxious-smelling lake is less than ideal. Lake Champlain, the water body that many of Vermont's watersheds drain into, is also a drinking water reservoir for more than 175,000 people.[1] Reducing nutrient pollution is highly important for economic, ecological, and human health reasons. Phosphorus levels in the northern part of the lake, however, are already at such high levels that algal blooms are likely to continue as a result of legacy pollution that has been occurring for many years, regardless of immediate reductions in

[1] "Drinking Water," Lake Champlain Basin Program, <http://www.lcbp.org/drinkwater.htm> (accessed December 3, 2008).

nutrient inputs.[2] This emphasizes the need for immediate and creative solutions to address the problem of nutrient runoff.

1.2 Non-agricultural Sources of Pollution

Runoff from farms is not the only problem affecting Vermont's waterways. According to the United States Environmental Protection Agency (EPA), households and urban areas are also responsible for contributing to the problem, because while residences individually add minor amounts of nonpoint source pollution from turf management and gardening to automobile runoff, collectively urbanization presents a serious problem regarding water quality.[3] As a solution, the EPA recommends that people limit impervious surfaces on their properties; use native vegetation that does not require large amounts of pesticides; properly use and dispose of chemicals; and maintain a clean and properly functioning septic system. The most effective water protection measures should consider pollution sources beyond property immediately adjacent to waterways.

Vermont's current Accepted Agricultural Practices (AAPs) regulate farmers without targeting the problems created by surrounding homeowners. Farms present an easy target to blame for poor water quality because in contrast to homeowners, their contributions to pollution are more visible. Furthermore, it is easier to regulate farmers when they are already subject to existing industry requirements. However, if water quality is to be improved in Vermont, then regulation of non-agricultural sources of

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[2] Jones, Ken, Michele Witten Braun, Dave Braun, David Healy, Don Meals, Mike Winchell, and Andy Schwarz. "Performance Audit of Vermont Clean and Clear." Governor's Clean and Clean Action Plan. <http://www.anr.state.vt.us/cleanandclear/news/PerformanceAudit-CleanandClear-Jan142008.pdf (accessed December 2008)>.

[3] "Managing Urban Runoff." Polluted Runoff (Nonpoint Source Pollution). 25 Feb. 2008. U.S, Environmental Protection Agency. <http://www.epa.gov/owow/nps/facts/point7.htm>.
"Managing Nonpoint Source Pollution from Households." Polluted Runoff (Nonpoint Source Pollution. 28 Feb. 2008. U.S. Environmental Protection Agency. <http://www.epa.gov/owow/nps/facts/point10.htm>.

pollution is necessary. Regulation of non-agricultural sources runs into the problem of opposition by property-rights groups, developers, and industry. In response, the Agency of Natural Resources (ANR) is currently exploring state incentives that could reward municipalities that develop their own buffer ordinances.[4] Regulation of non-agricultural sources of pollution will require a different approach than that of agricultural sources of pollution; this project focuses on the latter in order to provide a more in-depth analysis, given the semester-length of this project.

1.3 Agricultural Sources of Pollution

State efforts to improve water quality vary significantly with the size and type of farms common to that state. Many states focus on particular water pollution inputs, such as manure. Several regulate the application of manure on farms, though they avoid a statewide mandate. The states that have very specific laws mostly direct legislation at farms of a certain size or a certain type such as hog farms or concentrated animal feeding operations, which are stringently monitored due to their high polluting status.

Most states use the nationally acknowledged goal of Best Management Practices (BMPs) in an effort to reduce water pollution. Farmers are encouraged to incorporate BMPs into their farm operations, and are often given incentives or financial aid in order to help them apply BMPs at low cost. BMPs target nonpoint source pollution directly, and many states try to structure the program in a way that allows for innovative and creative solutions to certain pollution concerns, such as waterborne pathogens. The BMPs that many states encourage include:

[4] Coleman, Warren, Lead Attorney for the Vermont Agency of Natural Resources. Interview 10/2008.

- Vegetated filter strips: planted around buildings and fields to prevent runoff of sediment, nutrients, and organic matter
- Diversions: built above barnyards, pastures, and crop fields to redirect clean water (such as rain water) from coming into contact with manure or pesticides. Often built as part of barnyard water management systems, which keep water out of barnyards (where animal waste is often concentrated)
- Fencing: meant to keep livestock away from rivers and streams
- Rotational grazing system: moving pastured animals strategically around the farm avoids overgrazing, which causes erosion
- Stripcropping: planting alternating strips of row crops and grain or forage crops on the contour of a hill, which prevents erosion
- Nutrient management: careful application of fertilizers to ensure that excessive amounts of nutrients are not loaded into the soil
- Subsurface drainage: installing pipes underground to drain excess water (another form of diversion)
- Waste field storage: the identification of areas of land that can safely hold temporary loads of manure without leaching too much of it into the soil
- Access road improvement: better roads can help reduce sedimentation[5]

The wide variety of different BMPs allows farmers to choose the practices that will be most suited to their specific farms with the help of local, state, and federal agricultural agencies. In most states, however, BMPs are voluntary, so many farmers

[5] "Watershed Agricultural Program (WAP)." Managing Land & Water Resources. New York City Watersheds. 20 Nov. 2008 <http://www.nyc.gov/html/dep/html/watershed_protection/html/farms.html>.

choose not to implement these programs despite the offer of financial assistance. For example, in Wisconsin, BMP implementation can be required of certain farmers, but only if seventy percent of the cost of implementation is covered by an outside agency.[6] Vermont, however, has taken some of the lower thresholds of BMP expectations and transcribed them into law as AAPs, which have mandatory compliance on all farms. Vermont is unique in this regard, since most other states rely on monetary rewards and public relations as incentives for farmers to implement BMPs. However, Vermont does not adequately enforce the AAP standards because the regulatory structure is mainly complaint-driven. Lack of effective education about the AAPs also contributes to confusion about what farming practices are permissible.

Due to the voluntary nature of BMPs, several states in the northeast have funded other initiatives related to water quality in addition to encouraging BMPs. New York's Watershed Agricultural Program has enacted a consultation service called the Whole Farm Plan. In this program, state officials actually visit individual farms and draft specific plans that maximize water quality protection, while taking into account the specific economic and business needs of the farm. Subsidies and grants then assist farmers in implementing the state's recommendations. The Whole Farm Plan has been successful in the Catskill and Delaware watersheds, where 240 of the 259 commercial farms have taken part in the Whole Farm Plan and applied certain BMPs and other protective water quality measures.[7]

Maine uses a similar method to protect water quality. Maine's Nonpoint Source Priority Watersheds program connects local, state, and federal agencies in an effort to

[6] Jones, Ken et al., 2008.
[7] "Watershed Agricultural Program (WAP)" 2008.

encourage local initiatives aimed towards cleaning up the water. The agencies visit different watersheds and undertake field studies to determine where the problems are and which solutions would be most effective in obtaining cleaner water. Like New York, Maine includes the implementation of farm-based BMPs in its plan to restore the water quality in certain watersheds. Additionally, Maine uses a statewide shoreline mandate to regulate compliance with water quality goals. Responsible land management is required for all land located adjacent to rivers, ponds, larger streams, wetlands, or coastal areas. Agriculture is often allowed near these areas, since the zoning applies more directly to construction of buildings and roads, but the existence of a statewide prohibition on certain activities near water is one of Maine's predominant methods of minimizing water pollution.[8] While statewide zoning regulations have been successful in Maine, it is a more contentious issue in Vermont; it is unlikely that any bill with the suggestion of statewide control over activities near water sources would pass, given the controversy that surrounded the passage of Act 250, the first broad environmental control regulation in the state.[9]

1.4 Vermont's Clean and Clear Program

Vermont has been tackling issues of water quality for several decades. Currently, the most extensive statewide effort to reduce both point and nonpoint source pollution is the Vermont Clean and Clear Action Program. The program revolves around the implementation of Total Maximum Daily Loads (TMDLs) in Lake Champlain. TMDLs set a maximum limit for the amount of phosphorus that can enter Lake Champlain in a given year, setting caps on the allowable phosphorus levels from Vermont, New York,

[8] Bureau of Land and Water Quality. <http://maine.gov/dep/blwq/>.
[9] Sherman, J. "Fast Lane on a Dirt Road." Woodstock, VT: The Countryman Press, 1991, p. 108.

and Quebec. The Lake Champlain Phosphorus TMDL was prepared in a joint effort by both Vermont and New York in 2002, and set a goal of eliminating 80 metric tons of phosphorus loading into the lake every year.

In Vermont, the TMDL is jointly managed by the Department of Environmental Conservation's Water Quality Division, the Agency of Natural Resources, and the Agency of Agriculture, and is divided into nine primary actions that can be undertaken to reduce overall phosphorus loading. These initiatives include stabilizing streams through river corridor protection, improving waste water treatment plants (which has been one of the most measurable successes of the program), preventing erosion at construction sites, maintaining better road systems, guiding towns in local plans to improve water quality, restoring wetlands that provide critical ecosystem services, promoting education about stormwater runoff, coordinating regional watersheds to work together towards enforcing the TMDL plan, and assisting farmers in reducing their share of agricultural phosphorus loading.

Since agriculture is a significant source of phosphorus loading,[10] Clean and Clear implements a wide range of programs to address agriculture's contribution to phosphorus in Lake Champlain. Clean and Clear advocates that farmers follow BMPs, or at least comply with the AAPs that all farmers are expected to follow. It also offers nutrient management incentives, a buffer program that allows farmers to plant and harvest permanent grasses along waterways, and an Agricultural Resource Specialist (ARS) Program that provides consultants to assist farmers in implementing AAPs and other management programs. Another important aspect of Vermont's Clean and Clear Program is the Conservation Reserve Enhancement Program (CREP). CREP is an

[10] Jones, Ken et al., 2008.

incentive program that pays farmers to take certain lands out of production and instead plant filter strips or riparian buffers. Though payment supposedly covers the income that the farmer will lose by taking a certain amount of land out of production, many farmers are reluctant to sign away their land in the long term contract of fifteen or thirty years that is required.[11]

The Vermont Clean and Clear Program has taken steps toward reducing phosphorus loading to Lake Champlain, but not in the amounts needed to ensure the desired high levels of water quality.[12] While all aspects of Vermont's Clean and Clear Program are important, this report focused specifically on recommending methods for reducing phosphorus from agricultural sources. The success of these suggestions is dependent on closing the gap between agency management and on-the-ground project implementation through better communication of all involved parties.

[11] Jenks-Jay, Nan. Personal interview.
[12] Jones, Ken et al., 2008.

2. Origins and History of H. 549

2.1 Legislative History

To address the water quality problems in Vermont, State Representative David Deen (D-Westminster) of the Fish, Wildlife, and Water Resources Committee proposed H.549—the "Buffer Bill"— in February 2008, which would require a 15-foot vegetative buffer on all waterways as a means to prevent and control water pollution, protect spawning grounds of fish and aquatic life, control land use and promote responsible development, preserve shore cover and natural beauty, and provide for multiple use of the waters in a manner to serve the best interests of Vermonters. However, this bill exempted agriculture, the timber industry, and existing uses. Amendments to H.549 expanded this buffer to a length of 50 feet and required an implementation deadline of July 2012. Additionally, the bill placed the burden on municipalities to implement their own plans before the deadline in 2012 for buffer zones that are either site specific or at least 50 feet wide along all waterways. The Agency of Natural Resources (ANR) would be responsible for regulating any municipality that failed to implement a sufficient buffer plan by that time.[13]

The bill was intensely debated on the House floor when amendments were proposed in March 2008 and was ordered to lie—no votes were taken. However, the debate raised many critical issues and allowed various constituents to voice their opinions which included concerns regarding statewide zoning, property rights for waterfront property owners, unfair benefits to municipalities that had already adopted waterfront zoning guidelines, the impact on the forestry industry, and the implications for Vermont

[13] Establishing Buffer Zones, VT H.R. H. 549 (2008) (unenacted).

farmers. While people support the concept of the bill, there are concerns about dual jurisdiction for farmers, determining whether the benefits outweigh the burdens, and if an educational approach would ultimately be more effective. It is expected that a different version of this bill will be reintroduced during the 2009 legislative session. Serious adjustments should be made beforehand to address these concerns.

2.2 Shortcomings of the Buffer Bill

While the intention behind the bill is admirable and its goals of reducing water pollution ought to be encouraged, there is little scientific or economic evidence that supports the efficacy of a statewide 50-foot buffer in improving Vermont's waterways. The feasibility of implementing the bill seems highly complicated. The ANR does not have the capacity or fiscal resources to enforce legislation that would require them to act essentially as a zoning administrator.[14] If there is no capacity to enforce an aggressive buffer bill, compliance is unlikely and the bill will be ineffectual.

The bill also contains a number of exemptions that undermine its effectiveness. It addresses new development, but the existing development and practices that have resulted in the poor water quality in Vermont are largely excused. Exempted from the buffer legislation are certain activities such as forestry conducted in compliance with accepted sustainable practices, existing uses such as agriculture and existing development, maintenance of public transportation facilities, the control of invasive plant species, maintenance of pollution abatement facilities, railroad activities, storm water treatment facilities, construction of electric transmission projects, certain developments, maintenance of utility lines, trail construction, and stairways. These exemptions could

[14] Coleman, Warren, 10/2008.

result in future conflict and confusion over legal jurisdiction. For example, farmers are already regulated under the existing AAPs; exemption from H.549 could make them legally responsible to both the ANR and the VAA if they are out of compliance. Furthermore, exempting farmers while forcing neighboring landowners to establish riparian buffers could result in hostility and accusations of double standards.[15] Vermont presently has many problems with polluted waterways, especially Lake Champlain[16]; exempting these uses and targeting new development seems to be an ineffective way to achieve cleaner water in the state.

Additionally, scientific evidence does not support major benefits from instating a 50-foot buffer. The most beneficial increase of buffer protection occurs from 0 to 10 feet, where at 10 feet, roughly 50% of nitrogen-based pollution is removed.[17] A curve for phosphorus-based pollution would have a similar shape.[18] By increasing the buffer zone from 10 to 50 feet, an additional 15% of pollutants are removed. For 75% of the pollutants to be removed from runoff, a buffer would need to be about 92 feet.[19] Additional evidence points to the fact that for buffers to be effective in reducing pollution and maintaining ecosystem integrity, they need to be highly site specific and need to be planned according to land slope, size of the waterway, and surrounding terrain characteristics, among other things.[20] From a wildlife protection perspective, studies suggest a minimum buffer of approximately 100 to 165 feet to sustain mammal, bird,

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[15] Eastman, Mike, Organic Farmer, Vergennes, Vermont. Personal interview 10/7/2008.
[16] Jones, Ken et al., 2008.
[17] Mayer, P.M., S.K. Reynolds, M.D. McCutchen, and T.J. Canfield. Riparian buffer width, vegetative cover, and nitrogen removal effectiveness: A review of current science and regulations. EPA/600/R-05/118. Cincinnati, OH, U.S. Environmental Protection Agency, 2006.
[18] Middlebury College, ES 401 "Buffer Bill" Farmer Focus Group, 2 Dec. 2008, Middlebury, VT.
[19] Mayer, P.M. et al, 2006.
[20] Ibid

reptile and amphibian communities.[21] Requiring a statewide 50-foot buffer on all waterways does not seem to be an effective way of ensuring reduced pollution from surface runoff. Given this, our project seeks to explore a different avenue to improve water quality in Vermont rather than revising the original Buffer Bill.

[21] Fischer, R.A., Martin, C.O., and J. C. Fischenich. 2000. Improving riparian buffer strips and corridors for water quality and wildlife. American Water Resources Association: International Conference on Riparian Ecology and Management in Multi-Use Watersheds August; Spackman, S.C. and J.W. Hughes. 1995. Assessment of minimum stream corridor width for biological conservation: species richness and distribution along mid-order streams in Vermont, USA. Biological Conservation 71(3): 325-332.

3. Methodology

In order to create a proposal that addresses the role of agriculture in keeping Vermont's water clean, we structured our methodology around research of the positions and work of the many interested parties; the politics of water quality issues; legal requirements for producers pertaining to water quality; and the values and culture of the farming community. Our first step was to familiarize ourselves with the bill and with its original supporters and detractors. We sought to gain as complete a perspective on the bill's evolution as possible, following its history and development through Vermont's legislative processes. In that vein, we contacted David Deen, the original author of the bill, as well as other legislators; officials from the Agency of Natural Resources; representatives of the Conservation Law Foundation; and officials from the Vermont Agency of Agriculture.

We were also concerned with a wider audience's opinion of the bill, which included environmental groups, residents, and developers. We became aware of the tensions surrounding statewide zoning regulations, and discussed the situation of building regulations at the state, county, and town levels. We also conducted preliminary research into the state's tax code, as an early exploration into funding sources.

We contacted many watershed groups and conservation districts such as the Lamoille County Natural Resource Conservation District (NRCD) and the Farmer's Watershed Alliance, to become familiar with different methods of handling land and water stewardship. We reached outside of Vermont to examine the measures of other states in improving or maintaining water quality, including New York State's Water Supply Watershed program and Maine's Bureau of Land and Water Quality. Our

preliminary research also brought us into contact with University of Vermont's Cooperative Extension Program with regard to finding assistance for plantings, which gave us a sense of federal aid programs regarding land management. Further research of programs such as CREP and EQIP also gave way to information about the funding sources for better land stewardship.

Moreover, being mindful of the complex social, economic, and political implications of the bill, we engaged in discussion with farmers. These conversations proved crucial to our research and helped us get a sense of farmers' thoughts on the bill, and on the issues of land stewardship in Vermont in general, with regards to farms. In talking to farmers, we became aware not just of their objections to the bill itself, but also of some of the other social, financial, or bureaucratic challenges that farmers face, which greatly informed the mechanics of our proposal. These meetings were conducted as informal conversations and tours with farmers, and also as a presentation of our proposal to a focus group of farmers and environmental group advocates.

Our scientific research consisted of interviews with employees of the US Geological Survey in New York, and perusal of journal articles and reports from various sources, including scholarly journals and government agencies themselves, regarding the science of buffers and land management.

We also were continually researching background literature and engaging in brainstorming and group discussion. The project underwent a continual process of review and editing, and at every step took into account the various perspectives and opinions that we continued to solicit. Our final product is a recommendation that seeks to

incorporate the interests of farmers into a policy that will better the quality of water in Vermont while taking into account the myriad complexities of the issues we encountered.

4. Shortcomings of Current Water Policy in Vermont

Vermont's obvious water pollution problem illustrates that Vermont's current efforts to curb nutrient runoff are inadequate. Through researching the different measures in place in Vermont, we found many answers to the question of why these measures are not working as well as hoped. We divided the problem into three categories: awareness, enforcement, and financial incentives.

4.1 Awareness

The AAPs are mandatory and are designed to significantly reduce nutrient runoff from farms. However, in our discussions with Rural Vermont and with several farmers, we found that many farmers do not know the specific requirements of the AAPs.[22] Some farmers do not even know that the AAPs exist, or are not aware that their farm falls under the jurisdiction of AAPs. The AAPs apply to all farms in Vermont, but some farmers and even some watershed group employees are under the impression that the AAPs apply only to dairy farmers.[23] Though there are several organizations throughout the state that attempt to publicize the AAPs through pamphlets, meetings, and personal farm visits, these groups have not yet reached a significant proportion of Vermont's farming community. It is clear that the requirements of the AAPs need to be made more accessible to farmers so that they can understand what is expected of them when it comes to water quality measures.

Additionally, information about programs like CREP and EQIP that can provide funding to farmers to implement BMPs on their farm is not widespread enough to make

[22] Schollenberger, Amy, Rural Vermont, and Mike Eastman, Organic Farmer. Personal interview. 10/07/2008.
[23] Rupe, Marli. Personal communication. 12/02/08.

these programs attractive to farmers. Many farmers are not aware that they have the option of participating in these programs, or are not sure if their farms are eligible. In order for the BMPs to really take hold on Vermont farms, it would be extremely helpful to have common knowledge of the availability of federal funding across the farming community.

4.2 Enforcement

The second problem with the regulations in place in Vermont is enforcement. Though the AAPs are mandatory on all farms, they are not actively enforced across the state. AAPs fall under the jurisdiction of the Vermont Agency of Agriculture (VAA), but the VAA is under-funded and under-staffed and could not possibly send a representative out every year to all of Vermont's six thousand farms to check that each farm is in compliance. Therefore, more than half of the enforcement being provided by the VAA is complaint-driven, where neighbors or visitors notice a farm that is out of compliance and call the VAA to report the farmer.[24] However, a farm that is visibly out of compliance to an untrained eye is likely to already have a major water quality problem that will be difficult to remediate. It is important that farmers anticipate inspection so that they comply with the AAPs; with a complaint-driven enforcement system in place, some farmers assume that no one will know if they do not follow the prescribed regulations.

Another problem with AAP enforcement lies in the relationship between agency officials and farmers. Though some agency officials do come from farming backgrounds, many do not, and these officials cannot have a genuine understanding of the real challenges that farmers face. VAA officials have been known to sound unintentionally

[24] Madden, Paul, Mississquoi Watershed Group. Personal e-mail. 11/19/2008.

patronizing when telling farmers exactly what they should do with the land that their family has been farming for generations. Looking at the successful examples of grassroots farmer networks to improve water quality, such as the Farmers' Watershed Alliance in Franklin County, we found that farmer to farmer communication is integral to any clean water initiative. It is important that farmers be able to talk to their peers about how to best implement low cost measures on their farms to improve water quality.

4.3 Incentivizing Beyond Compliance Practices

The last major obstacle to the success of Vermont's water quality initiatives is that of funding. With the AAPs not actively being enforced by the Agency of Agriculture, farmers have little incentive to pay for water quality projects out of their own pockets. Farmers face enormous economic challenges on a daily basis already; unfunded mandates present a severe hurdle for them to overcome. While federal and state programs do offer funding to farmers who wish to implement BMPs on their farm, many farms that apply to these programs are rejected based on location or size; the budget of programs to fund clean water initiatives is limited and must prioritize certain farms over others. In addition to needing more help with funding, farmers need a bigger incentive to apply to federal and state programs, since signing onto these programs sometimes means committing to a long term investment on your land or entering a bureaucratic mire. Only when funding resources become readily available to them will farmers have the means to implement progressive clean water measures on their farms.

5. Our Proposal

Our proposal seeks to incorporate the aspects of awareness, enforcement, and incentive that were highlighted in the previous section as shortcomings of the current proposed legislation. The main components of our proposal address awareness by including a yearly meeting for farmers; address enforcement with the implementation of a lead farmer program; and create a financial incentive to go beyond compliance with a certification system to benefit farmers committed to clean water.

5.1 Awareness: Educational Outreach

Education is a necessary component of an effective conservation program as it not only explains what is at stake for communities economically and environmentally, but gives people the tools to make informed decisions about natural resources. The importance of education was highlighted in Bill H.549—it mandated the establishment of an education initiative and allocated $50,000 to fund the effort.[25] Currently there are several governmental education and conservation assistance programs that provide advice and funding to help farmers reduce erosion and runoff while improving wildlife habitat. These programs are crucial to reducing Vermont's water pollution and should be publically promoted to a greater extent. Farmers also have an important role to play in conservation education as they ultimately are the most familiar with their land and know how to frame issues that pertain to their community.

Conservation programs vary in their specific goals, though many address issues relevant to water quality. The Conservation Reserve Enhancement Program (CREP),

[25] Committee on Fish, Wildlife and Water Resources. Sec. 11 of Bill H. 549: "An Act Relating to Establishing Buffer Zones Along Waterways of the State." 2/19/2008.
Committee on Fish, Wildlife and Water Resources. Sec 13(a)(b) of Bill H.549: "Conservation; zoning; waterfront buffers." As introduced.

Environmental Quality Incentives Program (EQIP), the Vermont Agricultural Buffer Program, and the Farm Agronomic Practices (FAP) program are just some of the existing resources available to Vermont farmers. Estimates of farmer participation in these programs range between 20% and >50%[26] regardless of the fact that many offer financial incentives and cost-sharing measures. While some farmers refuse enrollment in these incentive programs due to the associated long-term contracts or because their land does not meet requirements, many others simply do not know the details of the application process or which sorts of programs their land qualifies for.[27] One reason for this is that outreach efforts are underfunded. For example, there are only three Agricultural Resource Specialists in the state who are in charge of "mak[ing] things happen on the ground"[28] and directing farmers to the appropriate expert to address their problem. While the programs that receive federal money (EQIP, CREP) are unlikely to see a reduction in incentive payments due to the passage of the 2008 Farm Bill, it is crucial that those who are responsible for disseminating information to farmers remain funded. A direct visit to a farmer's land to highlight the possible opportunities is one of the most effective ways of getting them involved in a conservation program.[29]

Fostering farmer-to-farmer communication is another important component of conservation education. In Vermont, Conservation Districts were originally self-

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[26] Miner, Craig, Farm Service Agency, Addison County, Vermont. Personal interview 11/10/2008. Hartline, Keith, Natural Resource Conservation Service, Addison County, Vermont. Personal interview. 11/10/2008.
[27] Ibid.
[28] Governor's Clean and Clear Action Plan. "Vermont Conservation District: One-on-One Technical Assistance to Agricultural Producers." <http://www.anr.state.vt.us/cleanandclear/ag-condist.htm> 11/8/2008.
[29] Hartline, Keith. Personal communication, 11/10/2008.

administered by farmers.[30] The declining numbers of farms in the state has hampered conservation efforts directed at the agricultural community because there are simply less farmers able to fulfill leadership roles and act as mediators between government agencies and their peers. An excellent example of a group that has managed to capitalize on the ability of farmers to lead by example is the Farmer's Watershed Alliance, a non-profit group based in Franklin and Grand Isle Counties. This group provides practical solutions to reduce obvious sources of water pollution and covers the costs immediately. This last point is especially important—often farmers cannot afford to wait for government incentive payments to cover the cost of updating infrastructure and fixing simple problems that affect water quality.[31] To date the Farmer's Watershed Alliance have helped over 40 farmers, 95% of whom approached the Alliance for advice, and it recently received funding from Governor Douglas' Clean and Clear Program.[32] Exploration of ways to expand this model to other regions of the state deserves serious consideration. A major reason for the success of the above example is that conservation advice is coming not from government scientists or agents, but from peers who understand the economic pressures of farming. While some criticize a farmer-led approach as being less thorough than going through the process of enrolling in a federal or state conservation program, the reality is that this mode addresses immediate problems while introducing farmers to other conservation possibilities. Leadership from within the agricultural community can be used to bring about continued progress in the struggle to improve Vermont's water quality.

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[30] Harris, Sylvia D. Agricultural Resource Specialist, Brattleboro, Vermont. Personal interview 10/21/2008.
[31] Rainville, Roger, Farmers Watershed Alliance, Franklin and Grand Isle, Vermont. 10/7/2008.
[32] Jones, Ken et al. 2008.

In addition to strengthening the educational initiatives already in place in Vermont to present farmers with information about the AAPs and BMPs, we suggest scheduling a yearly meeting for farmers. The meeting would be sponsored by the farming community (perhaps with the help of Rural Vermont), and would be held on several dates in different locations throughout Vermont to ensure that farmers could attend. Originally, we were leaning towards a mandatory meeting, where the farmers who did not attend would receive a farm inspection visit that checked that farm's compliance with the AAPs. While we struggled with the idea of a mandatory meeting, we felt that the only way to be certain that farmers are aware of clean water regulations would be to require attendance at the meeting.

However, the farmers we spoke to about this idea supported the notion of a yearly meeting, but were strongly opposed to making it mandatory. Furthermore, Rural Vermont commented that they would not be able to support a mandatory meeting, since it would give the Agency of Agriculture the opportunity to keep even more detailed records on the activities of farmers in the state, when many farmers already feel over-regulated. Due to the concerns of our community partners, we revised our proposal to suggest a yearly meeting for farmers that is not mandatory, but which includes a strong incentive to attend.

The yearly meeting would be intended to refresh farmers' understanding of AAP requirements, and publicize information about federal funding available for BMPs. The meeting would provide farmers with the opportunity to communicate with each other about what efforts have been effective, and discuss other farmers' successful projects to improve water quality. Hopefully, the meeting would serve as a constructive public

forum that would foster better communication among farmers and facilitate the sharing of strategies and ideas. As an additional incentive to attend, it would be helpful to develop a system where farmers who attend the meetings would receive higher priority in the selection of federal funding for BMPs. Potential grant recipients for funding are divided into five different tiers of priority based on location, size, and type of farm. A system in which farmers who attend the educational yearly meetings would receive points on their application to federal funding programs would perhaps give farmers an incentive beyond social networking to attend the yearly meetings. With a high attendance rate at the yearly meetings, more farmers would be better exposed to the specific regulations, such as the AAPs, that are already in place in Vermont to protect water quality.

5.2 Enforcement: Better Enforcement of the Accepted Agricultural Practices (AAPs)

Better enforcement of the AAPs will be essential in reducing agricultural sources of water pollution in Vermont. Currently, the majority of enforcement is complaint-driven.[33] One of the largest problems with the AAPs concerns enforcement. Admittedly, the VAA is underfunded and understaffed; currently, the state of Vermont has only five field agents who follow up on complaints and investigate claims of AAP violations.[34] In 2007, fewer than ten farms received any sort of penalty for noncompliance.[35] There are approximately 6000 to 8000 farms in Vermont and these numbers pose considerable challenges to field agents.[36] Overall, the lack of funding results in the inability of the agency to efficiently and effectively enforce the AAPs, creating a culture of complaint-

[33] Paul Madden, Missisquoi River Basin Association. Personal e-mail, 11/20/ 2008.
[34] Lamoille County Watershed Association Publication.
[35] "Accepted Agricultural Practices." Clean and Clear Programs. 2006. Agency of Agriculture, Food, and Markets. 11 Dec. 2008 <http://www.anr.state.vt.us/cleanandclear/rep2007/07ag.pdf>.
[36] Shollenberger, Amy, Rural Vermont. Personal communication.

driven enforcement, which leads to tension between neighbors and breaks down cooperative relationships.

Another problem with the AAPs also concerns the lack of effective education and dissemination of information to farmers. Often, farmers are unaware of the requirements to which they must adhere; they are also unaware of many incentive programs available to them that provide money, resources, and labor.[37] Newsletters and bulletins are published and distributed by both the VAA and ANR, however these publications do not always demonstrate their effectiveness in describing programs. In order to ensure broad community support, the VAA and the ANR need to rethink these programs; look into institutional as well as non-institutional incentives; and better disseminate information. One of the dynamics that complicates the issue of enforcement is the relationship between farmers and government agencies and officials. This relationship needs to be addressed in a variety of creative ways to work towards building trust and mutual respect between constituents.

Community values play a strong role in Vermont; education and guidance would be more welcomed if they were provided from within the agricultural community, in addition to a government agency. Unfunded government mandates and regulations that are disconnected from the economic reality of farmers' situations are unlikely to reduce water pollution and can place disproportionate burdens on the farming community.

This proposal entails some changes in the way enforcement and education are achieved. Conservation districts, watershed associations, and the farming community should all work in distributing assistance and information of use to farmers in need. At

[37] Schollenberger, Amy, Rural Vermont, and Mike Eastman, Organic Farmer. Personal interview. 10/07/2008.

the annual training session described in the previous section, regional "lead farmers" will be appointed who will be educated and trained to provide assistance to farmers in complying with the AAPs and in implementing the BMPs at low cost. This "lead farmer" would go through a training program to become highly knowledgeable about the AAPs and other programs that are designed to help farmers save money while being in compliance. This representative would be given a stipend and would have the responsibility of traveling to local farms, decided via lottery, and enforcing the requirements of the AAPs. Additionally, his or her farm would showcase compliance with the AAPs and implementation of the BMPs and provide suggestions to fellow farmers that they could implement on their own farms.

5.3 Incentivizing Land Stewardship Beyond Compliance: Past Successes as a Potential Model for a New Program

To address the financial aspect of our proposal, we investigated incentive programs to increase the value of farmers' products. As fiscal and legislative resources are currently strained and while it appears that educational efforts have not always been productive,[38] a land management certification program exists as a third option that would incorporate elements from both the regulatory and educational realms. A certification program would draw upon the popularity of information-based environmental regulation; as a result, it would not require the funds that would be needed for a traditional "command and control" regulatory approach. An example of information-based regulation exists in the federal Toxic Release Inventory (TRI) program, where polluters of specific unregulated emissions must release and make public the type and size of these

[38] Deen, David, Vermont General Assembly. Personal email. September 2008.

emissions. This program does not require any pollution controls; businesses and people simply must disclose information that can be disseminated to the public. This public disclosure can then act as an informal regulation, as it may not be profitable for a business to make a "Top Polluter" list. The Harvard Environmental Law Review concludes in a 2001 article on the TRI that:

> Publicizing the sources of a socially undesirable activity can reduce its extent faster and less intrusively than reliance on a regulatory approach. The very success of that alternative method should also allow the reduction of regulatory requirements—particularly at the federal level—to reflect the new capabilities, created by information disclosure, of states and local communities to address these issues on their own.[39]

Additionally, command and control environmental legislation does not take into account costs of compliance. This issue can run into environmental justice problems, where these costs of compliance would hurt less profitable businesses, poorer individuals, and new farmers just starting up more than they would their prosperous counterparts. An information-based environmental regulation allows people and businesses to continue their harmful practices, however, the threat of negative social pressure from the surrounding community could act as a stronger deterrent of pollution than a command and control model. This use of information to influence action has also been the cornerstone of the League of Conservation Voters (LCV). The LCV tracks how elected officials vote on environmentally sensitive legislation, and endorses the "greener" candidate, as evident in their "Dirty Dozen" program. The LCV prides itself on the fact that "LCV's trademark Dirty Dozen program targets candidates for Congress—regardless of party affiliation—who consistently vote against clean energy and conservation and are

[39] Pedersen, William F. "Regulation and Information Disclosure: Parallel Universes and Beyond." The Harvard Environmental Law Review, 2001. 25 Harv. Envtl. L. Rev. 151. Accessed from LexisNexis: October 29, 2008.

running in races in which LCV has a serious chance to affect the outcome. Since the Dirty Dozen was launched in 1996, LCV has defeated more than half of the candidates named to the list."[40] Environmental regulation that exists without adequate funding will not accomplish the goals of the given law; an informational approach, on the other hand, would reduce costs and could achieve results that an otherwise unfunded mandate would not.

Products containing a "value added" designation have become popular in recent years. These designations can refer to where a product originated, such as "Local" or "Made in the USA." They can refer to the practices used, such as "Dolphin Free," "Fair-Trade," or "Certified Organic." In home construction, they can refer to efficiency, such as "LEED Certified" or "EnergyStar Qualified" homes. Andrew Meyer of the Hardwick, Vermont based Center for an Agricultural Economy has stressed the potential of value-added products as a way to improve local business and the surrounding community. Value-added building practices have even worked on the local level as in the case of the Vermont Builds Greener program that focuses on sustainable construction in the state. Like the TRI, the designation of a particular product, practice, or method to be certified as something special does not require people or businesses to change their practices; these special designations are for those who are seeking to be rewarded for their "socially responsible" practices.

[40] McNeil, Joshua. "Congressman Tim Walberg Named Last Member of the 2008 Dirty Dozen." League of Conservation Voters. <http://www.lcv.org>. Accessed October 28, 2008.

5.4 Incentivizing Land Stewardship Beyond Compliance: Our Proposal

This proposal calls for a buffer protection program that incorporates elements of information-based environmental regulation as well as the benefits that come from a value-added scheme. The program would be framed in a way that would encourage the protection of Vermont's water resources. Called the Farmers for Clean Waters (FFCW) Program, farmers who implement the existing Best Management Practices could apply to this program and use their certification as a marketing tool. As all farmers would be visited by the "lead farmer" to discuss how they could implement the AAPs, farmers would also be informed of the option of implementing the BMPs, showing what the farmer could do to minimize the output of nonpoint source pollution from the property. Pending inspection, farmers that follow through on these recommendations listed in the BMPs would be recognized as being "Runoff Neutral" or "FFCW Certified."

This information would be added to state records as proof that the farmer received this certification, which could be used in state publications or disseminated to the public through local grocery stores, farmers' markets, or restaurants in a way that would show which farmers are doing their part to protect Vermont's water quality. This label could be added to participating farms and businesses to promote their socially responsible practices. Farmers that do not sell directly to the public would also have an incentive as wholesale buyers may want to avoid non-Vermont FFCW products, such as Ben and Jerry's decision to avoid recombinant bovine growth hormone treated cows.[41] More FFCW properties would result in improvements in water quality, which would boost local economies that depend upon Vermont's waterways for tourism as well as reduce the

[41] Machalak, Rob. "Ben and Jerry's Supports International Dairy Association Lawsuit over rBGH Labeling Regulation in Ohio." 30 June 2008. Reuters web page accessed 5 Nov. 2008. <http://www.reuters.com/article/pressrelease/idus184368+30-jun-2008+bw20080630>.

costs of other water cleanup projects. When the economic benefits of certification are combined with social pressure for farms to improve their practices, enrollment in this voluntary program should begin to spread and as more people sign onto the FFCW program, the more difficult it would become to avoid seeking certification.

What makes the FFCW program a more lucrative option is that it not only encourages enforcement at a fraction of the cost, but it provides incentives to those who pursue FFCW Certification in the form of higher product values and positive social capital. As this proposal does not require a form of statewide zoning or mandatory land-use regulation, the program will mollify property rights groups. Environmental justice advocates will also be relieved as this program would be completely voluntary, as farmers can decide whether or not to seek such certification and not be burdened by costly regulation that would disproportionately hurt them and the economically disadvantaged.

Funding for the inspection and certification costs could be modeled on the VAA's Buy Local, Buy Vermont, Certified Vermont Made program that charges an annual fee based upon <0.2% of annual sales.[42] To further reduce costs, the people conducting the surveys would not need to be state employees, merely certified by the state (or watershed group) through certification classes. These certification classes could be provided by an authority of the state and then also taught by the state, University of Vermont's Cooperative Extension, or Rural Vermont to interested third parties, who could either charge for the site analysis, or provide the services pro-bono. Implementation of the BMPs should be accomplished by the landowner at little cost, since federal and state

[42]""Certified Vermont Made" Application and User's Agreement." Vermont Agency of Agriculture, Food, and Markets. 12 Nov. 2008 <http://www.vermontagriculture.com/buylocal/documents/certifiedvermontmadeapplication.pdf>.

funding is available to assist farmers to take these measures.[43] The implementation of the FFCW Certification program would deliver big results on a little investment; the program would come at little cost to the state, it would benefit the participating landowners financially, and the program would also work to greatly improve Vermont's waterways.

[43] Dehne, Nicole, NOFA. Personal interview, 11/21/08.

6. Conclusions

The problems we found with H.549 were so pervasive that it made more sense to create a new program altogether rather than try to revise the existing bill. Our proposal takes advantage of programs that are currently in place in Vermont as well as its assets such as social capital and its environmental conscience. It also incentivizes taking measures to improve water quality, which the original bill neglected to do. The programs already in place in Vermont provide excellent resources for setting the stage for major water quality improvements and were overlooked by the original H.549 buffer bill. There is adequate federal and state funding that is already available that should be utilized to encourage the incorporation of clean water measures on farms rather than making an unfunded mandate without providing enough support for its implementation. Additionally, Vermont is a state with high levels of social capital that should be utilized to foster communication and generate engagement and activism. Furthermore, to encourage farmers to work to improve water quality, there must be incentive for them to do so. The original H.549 bill did not provide any such incentive and was purely a regulatory mandate.

Our proposal is an attempt to move Vermont's system away from a complaint-driven policy, where water quality regulations are rarely enforced unless there is a major noticeable problem. Complaint-driven regulations often pit neighbors against one another, and our intent is to make sure that each farmer has access to the necessary tools for compliance. In the more pro-active approach of making sure every single farm is complying at least with AAPs, farmers do not have to go through the complicated paperwork and procedure of dealing with a filed complaint.

The model of enforcement in our suggestion is similar to the roles already played by Agricultural Resource Specialists (ARSs) in Vermont's Clean and Clear Program. ARSs, funded through the EPA's nonpoint source program, are expected to be resources for one-on-one communication with farmers, to help them comply with the AAPs and to assess how their farm could implement BMPs. It is incredibly important to have staff that can work with farmers one on one, especially if that staff is made up of actual farmers, which is what we are proposing. The problem with the current system is that Vermont only has three ARSs, each of whom is in charge of three or four counties. This is far too much area for the specialists to be able to possibly keep track of every farm in their district, let alone visit each farm. In our proposal, we try to increase the number of people who are on hand to help farmers, localizing enforcement so that each lead farmer is only in charge of a small area. Hopefully, this will provide the power and the expertise that farmers need to educate themselves about AAP compliance and BMP implementation.

Vermont is a state where people take part in their communities and are part of integrated social networks. It would be unfortunate to ignore this asset of social capital in Vermont while creating policy; social capital may be one of the most important types of capital in the state. The concept of social capital acknowledges the value of connections within and between social networks that increase the strength of communities.[44] Leading sociologist Robert Putnam even went as far to refer to Vermont as the "social capital capital" of America.[45] Our proposal takes advantage of Vermont's high levels of social capital to channel education and disseminate information in its utilization of farmer to

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[44] "Vermont Land Trust Annual Report 2007-2008: Acting Together for Conservation." Vermont Land Trust. <http://www.vlt.org/annualreport07-08.html>.

[45] Ives, Mike. "Vermont: the "Social Capital Capital?"" Blurt: the Seven Days Staff Blog. 29 Apr. 2008.Seven Days: Vermont's Independent Voice.<http:///7d.blogs.com/blurt/2008/04/vermont-the-soc.html>.

farmer networks and its proposed annual farmer meeting. It seems as though efforts to improve water quality will both harness and generate social capital by connecting farmers to other farmers and also to representatives from state agencies. Working to improve water quality by bringing different constituents together will create new community bonds and strengthen existing ones. The yearly meeting for famers that explains measures that can be taken to improve water quality will provide a forum to connect with each other and share strategies that have proven to be effective; in essence it should bring together and create clean water advocates. Farmer to farmer communication has great potential to be an effective means of disseminating information and raising awareness of water quality issues while creating new bonds and strengthening ones that already exist.

Our proposal seeks to utilize what is already in place in Vermont while being innovative and proactive in enforcing implementation rather than creating a new program with an unfunded mandate using strategies that have proven unsuccessful in the past. Our proposal utilizes Vermont's currently operating funding programs as well as its assets of social capital and environmentally conscientious farmers. Moving away from a purely complaint-driven policy strategy is necessary to further success in cleaning Vermont's water. Creating a network of clean water advocates through fostering communication between different constituents is important to ensure that information is disseminated and resources are provided to famers to help them take measures to improve water quality. Farmers need to have an incentive to take measures to improve water quality as well as be provided with adequate resources and educational information to do so. Nobody is "against" clean water and farmers generally want to do the right thing when it comes to protecting Vermont's natural resources; our proposal is based on the

recognition that water policy in Vermont needs to take advantage of this and incentivize taking measures to improve water quality while providing the resources and means to do so.

6.1 Potential Challenges

While this proposal tries to address the current problems facing agriculture and water quality in Vermont, there is the possibility that further issues may arise that will require future work. Several of these issues were highlighted in a focus group meeting we hosted for several members of Vermont's agricultural community. One problem dealt with the definition of what a farmer was, and how that should apply to farming regulations. Regulations may need to be altered to address this issue, as a homesteading family will treat the land a lot different from an agribusiness.[46] Currently our proposal, while it tries to eliminate the problem of a "blanket proposal" that H.549 presented, still treats Vermont farms as being similar, without giving distinction to size or type. Research would need to go into ways of treating runoff from different farms in terms of content and quantity.

Our proposal stresses the need for farmer-to-farmer communication while incorporating some degree of regulatory enforcement with the concept of the "Lead Farmer." Through the focus group meeting, Phil Benedict of the Vermont Agency of Agriculture informed us that farmers would not "rat each other out," and that this idea would prove to be ineffective. What he and others recommended was that many regulations need to be made piecemeal, and eventually, problems will get solved, as in

[46] Shollenberger, Amy, Rural Vermont. Middlebury College, ES 401 "Buffer Bill" Farmer Focus Group, 2 Dec. 2008, Middlebury, VT.

the cases of the prevention of winter manure spreading or the use of liquid manure. The problem here is that continued pollution could pose a threat to Vermont's economy, and gradual regulation may not be a cost-effective solution.

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Appendix 1: Results from Focus Group Meeting

Franklin Environmental Center at Hillcrest
Middlebury College
December 2nd 2008:

People Present:

Marli Rupe—Poultney-Mettowee Natural Resources Conservation District

Sam Burr—Farmer from Monkton and Former Legislative Council

Jane Clifford—Director of Green Mountain Dairy Farmers Cooperative Federation, INC

Susan Alexander—Conservation Districts ARS in Northeast Kingdom

Phil Benedict—Vermont Agency of Agriculture

Mike Eastman—Dairy Farmer

Steve Pratt—Dairy Farmer

Anthony Iarrapino—Attorney with the Conservation Law Foundation

Amy Shollenberger—Director of Rural Vermont

Major Points Discussed:

- Nitrogen vs. Phosphorous—do they behave differently?
- Harvesting buffer to remove phosphorous—managed buffer is better than a non-managed buffer.
- The definition of what makes a farmer needs to really be examined.
- Regulations need to be better tailored to different farmers. Heavily regulated dairy farms will treat the land a lot differently than first generation homesteaders.
- Emphasis on the power of farmer-to-farmer connections and community events to spread awareness.

- Required meetings and workshops not nearly as powerful as hearing it from someone you know.
- 50% of all milking cows in Vermont are concentrated on 200 farms, to get the most for your money, its better to go after the big farms.
- Confusion over dual jurisdiction issue, and whether it would really be a problem
- Perhaps this form of regulation is not the right path—there are other that could be addressed, such as number of cows per acre or how manure lagoons are being used.
- New solutions are needed, however progress has been made, it has just been gradual.
- Thoughts that we should examine our idea of a lead farmer, if they are considered private sector contract employees, this could pose problems in public oversight.
- Farmers unsure if anyone would want to take the spot of "lead farmer" as many of them are incredibly busy.
- Questions were raised about the effectiveness of a certification program, and if it would bring money into the community.
- Instead of requiring meetings, give an incentive to attend, such as more points on a grant application; the Lead Farmer should be an educator.
- Information and education should also be given to farming third parties, like feed dealers, vendors, milk truck drivers.
- AAPs need to be marketed better, through articles in papers and in other mediums.

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